

# Research Highlights

## Health Maintenance Organizations and the Changing Physician Workforce

The composition of the U.S. physician workforce and its geographical distribution are critical to the efficient functioning of the health care system and the provision of quality health care. Many analysts believe that the growth of managed care in recent years has decreased earning opportunities for specialists while not affecting, or even increasing, earning opportunities for generalists. Moreover, managed care is thought to have reduced physicians' professional autonomy and the appeal of medical practice. Thus far, however, the influence of managed care on the geographical distribution of physicians has not been considered.

To explore the relationship between the growth of managed care and the physician workforce, José Escarce and colleagues conducted a series of studies of physician practice location and retirement decisions from 1986 to 1996, a period of rapid growth in managed care. These studies drew upon data from the American Medical Association (AMA) Physician Masterfile, which contains information on physician practice location, specialty, and major professional activities.

The researchers found that the growth of managed care in the United States, particularly the growth of health maintenance organizations (HMOs), has had a profound effect on the practice location choices of both generalists and specialists. In addition, the growth of HMOs appears to be influencing physicians' retirement decisions, further contributing to a geographical redistribution of physicians throughout the nation.

### How Has Managed Care Affected Medical Practice?

Both the results of earlier research and anecdotal reports from individual physicians suggest that the growth of managed care in the United States, particularly the more restrictive HMOs, has affected the utilization of health services through a variety of mechanisms. For example, the practice of using generalists

as "gatekeepers" may restrict patient access to specialists, potentially exacerbating the surplus of specialists. The practices of capitation and sharing financial risk with physicians may reduce the use of diagnostic tests and other procedures as well as specialist referrals, since any costs that exceed a patient's "cap" must be assumed by the primary care providers. Provider profiling to monitor practice behaviors, the use of clinical practice guidelines to define acceptable standards of care, and utilization review to control excessive use of procedures and services may also decrease the use of those procedures and services as well as the specialists who perform them. Not surprisingly, recent research suggests that HMOs have led to a decrease in the demand for specialists' services and in their incomes. At the same time, HMOs may have increased the demand for generalists' services. Among established physicians, the growth of managed care has also impinged on professional autonomy, and job satisfaction appears to be decreasing.

### For more information

Escarce, J. J., D. Polsky, G. D. Wozniak, and P. R. Kletke. 2000. "HMO Growth and the Geographical Distribution of Generalist and Specialist Physicians." *HSR: Health Services Research* 35(4):825-848.

Escarce, J. J., D. Polsky, G. D. Wozniak, M. V. Pauly, and P. R. Kletke. 1998. "Health Maintenance Organization Penetration and the Practice Location Choices of New Physicians: A Study of Large Metropolitan Areas in the United States." *Medical Care* 36(11):1555-1566.

Kletke, P. R., D. Polsky, G. D. Wozniak, and J. J. Escarce. 2000. "The Effect of HMO Penetration on Physician Retirement." *HSR: Health Services Research* 35(5 pt. 3):17-31.

Polsky, D., P. R. Kletke, G. D. Wozniak, and J. J. Escarce. 2000. "HMO Penetration and the Geographic Mobility of Practicing Physicians." *Journal of Health Economics* 19(5):793-809.

To understand the influence of managed care on physician practice location, Escarce and colleagues undertook a series of studies of the effect of HMO presence in different market areas on physicians' decisions to locate or maintain their practices in those areas. HMO presence was measured as the proportion of the population that receives its health insurance coverage from an HMO. HMOs have increased their presence rapidly in some areas of the country, whereas other areas have been minimally affected. The researchers took advantage of these differences among market areas to examine the relationship between HMO presence and the location of various types of physicians. Specifically, they examined the association between HMO presence and the practice location choices of new physicians, the likelihood of established physicians changing practice locations, and the retirement decisions of older physicians. They also assessed the influence of HMO presence on the aggregate geographical distribution of physicians across metropolitan areas. To determine whether HMOs influence specialists and generalists differently, the researchers divided physicians into groups consisting of generalists, medical and surgical specialists, and hospital-based specialists.

## Types of Physicians

**Generalists** are family practice physicians, general internal medicine physicians, and general pediatricians.

**Specialists** include cardiologists, gastroenterologists, other internal medicine subspecialists, obstetricians and gynecologists, neurologists, ophthalmologists, general surgeons, surgeons with subspecialties such as orthopedic surgery, and psychiatrists.

**Hospital-based specialists** include emergency medicine physicians, radiologists, anesthesiologists, and pathologists.

## HMO Presence Influences the Practice Location Decisions of New Physicians

Physicians who intend to engage in full-time patient care typically choose the location of their first practice within two or three years of completing their graduate medical education (GME). Although many studies have examined the factors that influence practice location decisions of new physicians, these studies predate the growth in managed care that has occurred over the past 15 years. New physicians are especially responsive to changes in health care delivery and financing. Thus, the

RAND researchers wanted to find out whether the practice location choices of new physicians would reflect the decrease in demand for specialist services relative to the need for generalists that many believe has resulted from the growing presence of HMOs. Using the results of the annual GME Survey conducted by the AMA, the researchers studied the practice location decisions of generalists and specialists who completed their GME between 1989 and 1994 and who located in one of the 98 largest U.S. metropolitan areas.

The study identified two significant patterns. First, new generalists were more likely than new specialists to establish their first practices in areas with a high HMO presence. This finding was consistent with the expectation that HMOs increase the demand for generalists' services relative to the demand for specialists' services. Second, between 1989 and 1994, the likelihood of locating a first practice in an area with high HMO presence decreased for both generalists and specialists. Thus, early in the study period, new generalists were more likely to locate in market areas with heavy HMO presence, whereas new specialists' practice location choices were not associated with HMO presence. However, by the end of the study period, heavy HMO presence had a weak negative influence on practice location for generalists and a strong negative influence on practice location for specialists. The figure shows the relative proportions of physicians who would be expected to locate in two hypothetical metropolitan areas, one with low (0 percent) HMO presence and one with high (60 percent) HMO presence, based on the study findings.

Two possible explanations may account for these findings. One is that practice opportunities for new physicians in areas with high HMO presence decreased over the time of the study if, for example, the efforts of HMOs to control utilization and contain costs resulted in lower demand for physicians' services. Alternatively, new physicians may have become more hesitant to locate in market areas with high HMO presence because of the tendency of HMOs to share financial risk with physicians and to reduce their professional autonomy. The results of the study did not clarify which of the two factors played a greater role. Nevertheless, the study clearly indicated that HMO growth is leading to a redistribution of new physicians from areas of high HMO presence to areas of low HMO presence.

It was not possible to determine whether high HMO presence in large cities was leading greater numbers of new physicians to choose to practice in small metropolitan or rural areas, because the study did not include those areas. However, the researchers observed that, whereas the aggregate population

of small metropolitan and rural areas grew by 1 percent annually between 1989 and 1994, the number of new physicians who located in these areas rose at an annual rate of 2 percent.

### HMOs Do Not Influence Established Physicians to Relocate

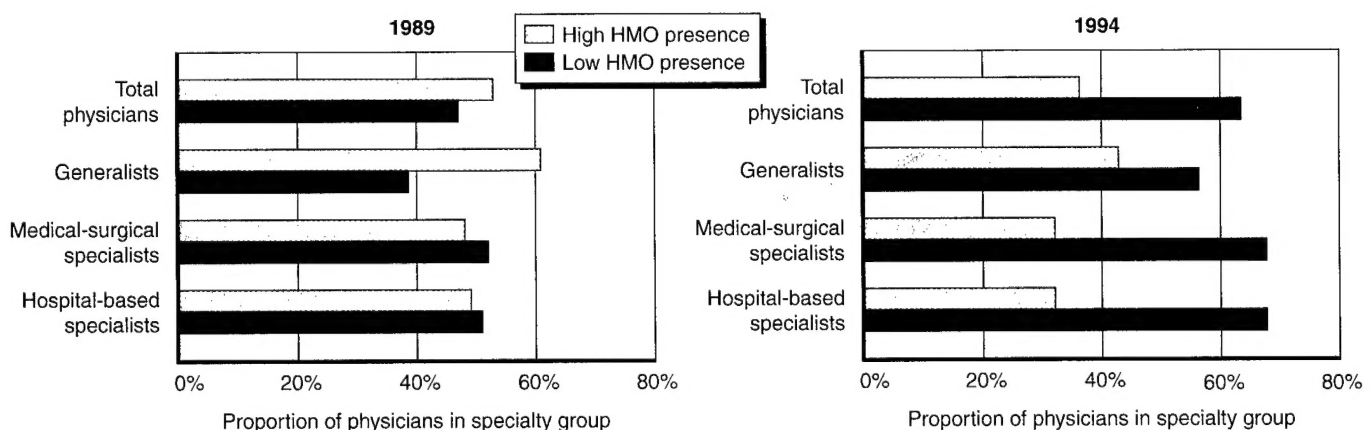
If the growing presence of HMOs has influenced the practice location decisions of new physicians, have HMOs also influenced established physicians in early- or mid-career to relocate their practices? To answer this question, Escarce and his colleagues examined the extent to which physicians with established practices changed their practice locations over a four-year period. An increase in the HMO presence in a metropolitan area was not associated with the decisions of mid-career physicians to relocate their practices or leave patient care altogether. The increasing presence of HMOs was associated with the decisions of specialists in their early careers to relocate their practices or leave patient care, but the size of this effect was much smaller than the effect of HMOs on new physicians' initial practice locations. Although physicians who relocated their practices tended to move to places with similar or lower HMO presence, the migration of established patient-care physicians seems to have played a minor role in the redistribution of the physician workforce from high-HMO areas to low-HMO areas. Established physicians may be unlikely to relocate for several reasons. These reasons include the high costs of reloca-

tion, particularly for mid-career physicians, and the possibility that mid-career physicians may be partially protected from any negative effects of managed care on their incomes or work environments, for example, as a result of well-developed patient caseloads and referral networks.

### The Increase in HMO Presence Influences Retirement Decisions

Anecdotal evidence suggests that patient-care physicians are increasingly opting for early retirement. Some analysts have suggested that this trend is a response to the decrease in physicians' relative earnings, the erosion of professional autonomy, and the general dissatisfaction with the practice of medicine that have resulted from the growth of managed care. Thus, Escarce and his colleagues were interested in whether physicians whose practices were located in areas of high HMO presence were more likely to retire early than were physicians who practiced in low-HMO areas. Using the AMA Physician Masterfile, the researchers found that physicians age 55 and over who practiced in areas of high HMO presence were more likely to retire than were physicians in the same age group who practiced in areas of low HMO presence. High HMO presence was associated with early retirement for the total physician population as well as for generalists and medical-surgical specialists, but not for hospital-based specialists or psychiatrists. Moreover, the impact of high HMO presence on retirement

**HMO Growth Has Led to a Redistribution of New Physicians from High-HMO Areas to Low-HMO Areas**



was greater for medical-surgical specialists than for generalists. These results suggest that older physicians may prefer to retire rather than to adapt their practices to the constraints imposed by managed care.

## HMOs Have Led to a Geographical Redistribution of Physicians

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The number of physicians practicing in an area is expected to reflect the demand for physician services in that area. If a rise in HMO presence increases the demand for generalists relative to the demand for specialists, then the geographical distribution of practicing physicians across the country should, over time, reflect the changes in HMO presence. To address this issue, the RAND researchers examined the changes in the distribution of generalists, specialists, and hospital-based specialists across the 316 metropolitan areas in the United States from 1986 to 1996 and their relationship with HMO growth during that period.

In the decade from 1986 to 1996, the number of physicians engaged in full-time patient care in the nation's metropolitan areas increased by 36 percent, but the rates of growth in the number of physicians varied considerably across areas. Similarly, although the presence of HMOs doubled overall, there were marked differences in the rates of increase in HMO presence across areas. The RAND researchers found that the rates of growth in the numbers of generalists and hospital-based specialists in different market areas were not associated with the increase in HMO presence. However, the numbers of medical-surgical specialists and, consequently, the total numbers of physicians, grew at much slower rates in areas where HMO presence grew more quickly. Thus, areas that experienced rapid rates of HMO growth also experienced increases in the proportion of physicians who were generalists.

The results imply that, over the past decade, a redistribution of physicians has taken place, particularly among medical-

surgical specialists, from market areas with high HMO presence to market areas with low HMO presence. These findings supported the researchers' belief that HMOs reduce the demand for physicians' services in general and the demand for specialists' services in particular. They parallel the earlier findings regarding the first practice location decisions of new physicians and the retirement decisions of older physicians. Taken together, the four studies suggest that the impact of HMOs on the location of new physicians' first practices and on the tendency for older specialists in high-HMO areas to choose early retirement has accounted for most of the geographical redistribution of physicians brought about by managed care. The relocation decisions of physicians with established practices have played at most a small role.

## Health Planning Must Account for Physician Responses to HMOs

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The growing presence of managed care, particularly HMOs, has influenced the geographical distribution of physicians. The greatest influence of HMO presence in these areas appears to be on the practice location decisions of new physicians and on the decisions of older physicians to retire. Although the analyses did not include rural areas, HMO growth has been slower in those areas than in metropolitan areas. As a result, an increasing proportion of physicians may be locating their practices in areas with lower population densities.

If the distribution of HMOs throughout the country evens out, physicians will no longer be able to avoid market areas with high HMO presence. Subsequently, new physicians may be forced to adapt their mode of practice or alter their specialty choices. The RAND researchers' findings imply that health workforce planning must begin to take physicians' responses to HMOs into account. However, the nascent "backlash" against managed care may make assessment and prediction of physician location and specialty choice even more difficult than in the past.

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